

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-27 and 29 are pending in the application, with 1, 11, 18, and 24 being the independent claims. Claims 1, 4, 11, 17, 18, 23, and 24 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Personal Interview with Examiner

A personal interview was held on Wednesday, January 25, 2006 between Examiner Dalip K. Singh, Supervising Examiner Ulka Chauhan and Applicants' representatives Michael Messinger (Registration No. 37,575) and Brian Lee. Applicants would like to thank the Examiner and Supervising Examiner for a helpful and constructive interview.

During the interview, U.S. Patent 5,914,724 to Deering *et al.*, U.S. Patent 5,398,321 to Jeremiah, and Applicants' claim 1 were discussed to clarify the features of the Applicants' invention. No agreements were reached. Arguments made by Applicants' representatives are incorporated and expanded herein. Applicants appreciate suggestions made by the Examiner and the Supervising Examiner. These suggestions were considered and incorporated in the amended claims and throughout the following remarks.

Rejections under 35 U.S.C. § 103

In the Office Action dated November 1, 2005, the Examiner has rejected claims 1-27 and 29 under 35 U.S.C. § 103, as allegedly being unpatentable over U.S. Patent No. 5,914,724 to Deering *et al.* ("Deering") in view of U.S. Patent No. 5,398,321 to Jeremiah ("Jeremiah"). (See Office Action, page 2). Applicants respectfully disagree. Applicants further believe these rejections are accommodated or are now moot in light of the above amendments.

a. Deering and Jeremiah teaches away from a combination thereof

As an initial matter, Applicants believe that the rejection of claims 1-27 and 29 under 35 U.S.C. § 103 in view of Deering and Jeremiah is improper for at least the reason that these two references teach away from a combination thereof and therefore fail, for at least this reason, to establish a *prima facie* case of obviousness.

Deering is directed toward a lighting unit of a graphics accelerator that utilizes only a single microcode routine to effectuate transfers of various color inputs and performance of various lighting calculations. (See Deering, Summary of the Invention; col. 3, lines 6-10; col. 12, lines 58-64). Deering teaches that by using only a single microcode routine, "lighting performance may be increased by optimizing for the single routine." (See Deering, col. 3, lines 6-10). Hence, Deering is directed toward a system that uses only a single microcode routine rather than numerous microcode routines to handle a variety of inputs. (See Deering, col. 12, lines 58-64).

Jeremiah, on the other hand, is directed toward a system that generates new microcode routines from pre-existing microcode routines to provide parallel execution of machine-level instructions on a scalable compound instruction set machine. (See Jeremiah, Summary of the Invention). Jeremiah discloses the utilization of separate microcode routines to execute each input machine-level instruction individually and the generation of new microcode routines to execute pairs of input machine-level instructions in parallel. (See Jeremiah, Summary of Invention). Hence, Jeremiah is directed toward a system that uses a variety of predetermined and runtime generated microcode routines to process a variety of input machine-level instructions. (See Jeremiah, Summary of Invention).

Since the system of Deering advocates the use of a single microcode routine to handle various inputs and Jeremiah advocates the use and creation of multiple microcode routines to handle various inputs, both Deering and Jeremiah teach away from each other and therefore, one skilled in the art would **not** have been motivated to combine Deering and Jeremiah. Hence, for at least the reason stated above, the combination of Deering and Jeremiah is improper and fails to establish a *prima facie* case of obviousness.

b. Deering or Jeremiah, alone or in combination, fail to teach or suggest each and every element of amended claims 1-27 and 29

Assuming for the sake of argument that the combination of Deering and Jeremiah is proper, Deering or Jeremiah, alone or in combination, do not teach or suggest each and every element of amended claims 1-27 and 29.

1. Claim 1-10

For the Examiner's convenience, independent claim 1 as amended is reproduced below:

1. A method for managing microcode, comprising the steps of:
evaluating a mode command to initiate or change a mode;
selecting a combination of functions and a sequence list forming a logical sequential concatenation of said functions, each function including microinstructions that, when executed, implement a phase or a sub-phase of said mode,
wherein said selecting said sequence list includes validating or optimizing said sequence list, wherein said **validating or optimizing comprises searching for a faster version of a first partial sequence list selectable for said sequence list, wherein said faster version is a second partial sequence list;** and
delivering said combination to a microcode processor according to said sequence list.

Neither Deering nor Jeremiah, alone or in combination, for example, teach or suggest, "selecting a combination of functions and a sequence list forming a logical sequential concatenation of said functions, each function including microinstructions, implement a phase or a sub-phase of said mode." Additionally, neither Deering nor Jeremiah, alone or in combination, for example, teach or suggest, "searching for a faster version of a first partial sequence list selectable for said sequence list, wherein said faster version is a second partial sequence list."

Deering is directed toward a lighting unit of a graphics accelerator that utilizes only a single microcode routine to effectuate transfers of various color inputs and performance of various lighting calculations. (See Deering, Summary of the Invention; col. 3, lines 6-10; col. 12, lines 58-64). Furthermore, Deering teaches that by using only a single microcode routine, "lighting performance may be increased by optimizing for the single routine." (See Deering, col. 3, lines 6-10). As Deering is focused on using only a single microcode routine, Deering does not teach or suggest, for example, "selecting a combination of functions and a sequence list." Furthermore, as Deering advocates the use of a single routine to allow for pre-optimization of a system, Deering does not teach or suggest, for example, "searching for a faster version of a first partial sequence list selectable for said sequence list."

Jeremiah fails to overcome the deficiencies of Deering. Jeremiah is directed toward a system that generates new microcode routines from pre-existing microcode routines to provide parallel execution of machine-level instructions on a scalable compound instruction set machine. (See Jeremiah, Summary of the Invention). Jeremiah discloses the creation of new microcode routines to allow for execution of pre-existing microcode routines in parallel. (See Jeremiah, Abstract; Summary of the Invention). As Jeremiah is focused on parallel execution, Jeremiah does not teach or suggest *sequential* orderings of microcode routines to implement a mode. Therefore, Jeremiah does not teach or suggest, for example, "selecting a combination of functions and a sequence list forming a logical sequential concatenation of said functions, each function including microinstructions, implement a phase or a sub-phase of said mode." Likewise, as Jeremiah is focused on parallel execution of microcode routines, Jeremiah

does not teach or suggest searching for a *faster sequential list* of microcode routines.

Jeremiah does not teach or suggest, for example, "searching for a faster version of a first partial sequence list selectable for said sequence list."

In the Office Action, the Examiner appears to equate the merging of microcode routines disclosed in Jeremiah with merger groups disclosed in the Applicant's specification. (See Office Action, page 3). Merger as described in Jeremiah and merger groups as disclosed in the Applicants' specification are technically very different. Merger in Jeremiah refers to the creation of a new microcode routine from two pre-existing microcode routines in which the pre-existing microcode routines are not preserved in its original form in the new microcode routine. (See Jeremiah, FIG 5; col. 11, lines 22-68; col. 12-13; col. 14, lines 1-6; col. 4, lines 10-19). A new microcode routine is created by substituting fields of the microinstructions of one pre-existing microcode routine with microinstruction fields of another pre-existing microcode routine. (See Jeremiah, FIG 5; col. 11, lines 22-68; col. 12-13; col. 14, lines 1-6). Hence, merger in Jeremiah, results in a new microcode routine comprising of microinstructions that are different from the microinstructions of the two pre-existing microcode routines being merged. Unlike the merger described in Jeremiah, merger groups as disclosed in the Applicants' specification refer to, for example, the concatenation of generic groups wherein a generic group represents, for example, one or more microcode routines. (See Applicants' specification, paragraphs 67, 77-82). A merger group, unlike a merged routine as described in Jeremiah, represents, for example, a logical concatenation of unmodified pre-existing microcode routines. Jeremiah does not teach or suggest concatenation of unmodified pre-existing microcode routines to

produce a new microcode routine during its merger process. Accordingly, the merger described in Jeremiah is very different from the merger groups disclosed in the Applicants' specification.

Hence, for at least the reasons stated above, Deering and Jeremiah, alone or in combination, fail to teach or suggest each and every element of amended claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1, and allowance thereof.

Claims 2-10 depend from independent claim 1 and are patentable for at least the reasons stated above, in addition to the elements, limitations, and/or features recited therein. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 2-10, and allowance thereof.

2. Claims 11-17

Similarly, amended independent claim 11 is patentable over Deering and Jeremiah, alone or in combination, for at least the reasons stated above. Claims 12-17 depend from independent claim 11 and are patentable for at least the reasons stated above, in addition to the elements, limitations, and/or features recited therein. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 11-17, and allowance thereof.

3. Claims 18-23

Similarly, amended independent claim 18 is patentable over Deering and Jeremiah, alone or in combination, for at least the reasons stated above. Claims 19-23 depend from independent claim 18 and are patentable for at least the reasons stated above, in addition to the elements, limitations, and/or features recited therein. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 19-23, and allowance thereof.

4. Claims 24-29

Similarly, amended independent claim 24 is patentable over Deering and Jeremiah, alone or in combination, for at least the reasons stated above. Claims 24-29 depend from independent claim 24 and are patentable for at least the reasons stated above, in addition to the elements, limitations, and/or features recited therein. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 24-29, and allowance thereof.

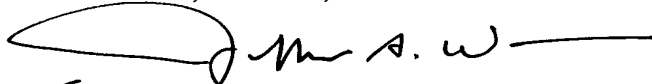
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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